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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,407	01/05/2005	Hiroyuki Naitou	264178US0PCT	9968

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EXAMINER	
HAILEY, PATRICIA L	
ART UNIT	**PAPER NUMBER**
1755	

DATE MAILED: 09/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/519,407	NAITOU ET AL.	
	Examiner	Art Unit	
	Patricia L. Hailey	1755	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 June 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *July 19, 2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Applicants' remarks and amendments, filed on June 20, 2006, have been carefully considered. No claims have been canceled or added; claims 1-15 remain pending in this application.

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on July 5, 2002. It is noted, however, that applicant has not filed a certified copy of the Japanese application as required by 35 U.S.C. 119(b).

Applicants have stated that the certified copy was submitted to the International Bureau in PCT Application No. PCT/JP03/05821, and that receipt of the certified copy by the International Bureau in a timely manner has been acknowledged.

Withdrawn Objections and Rejections

The objection to claim 1 for the misspelling of the word "gallium" stated in the previous Office Action has been withdrawn in view of Applicants' correction via the amendment to claim 1.

The 112(2) rejection of claims 1-15 stated in the previous Office Action has been withdrawn in view of Applicants' clarification presented during the interview on May 24, 2006.

Maintained Rejections

The following rejections of record have been maintained; the text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

2. Claims 1-15 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Kasuga et al. (U. S. Patent No. 6,458,740).

Kasuga et al. teach a method for preparing a catalyst via preparing an aqueous solution or dispersion such that the ammonium ion content does not exceed 10 mols per 12 mols of the molybdenum atom content. See col. 2, lines 4-21 of Kasuga et al.

The method involves dissolving or uniformly dispersing raw materials containing the catalyst-constituting elements, such as phosphorus, molybdenum, and vanadium. The catalyst is defined by the general formula

$$P_aMo_bV_cX_dO_x$$

(wherein P, Mo and V are phosphorus, molybdenum and vanadium, respectively; X represents at least one metal element capable of constituting a heteropolyacid salt, which is selected from alkali metals (potassium, rubidium, cesium and the like), alkaline earth metals, copper, silver, zirconium, niobium, zinc, magnesium, selenium, tellurium, arsenic, antimony, germanium, iron, nickel and silicon; O is oxygen, a, b, c, d and x signify atomic ratios of P, Mo, V, X and O, respectively, where b is 12, a is 0.1–3, c is 0–6, d is 0.05–5, and x is a numerical value determined by valency of each element).

See col. 2, lines 42-62 of Kasuga et al. Note that the general formula of Kasuga et al. overlaps that of the instant claims in terms of metal components and their respective atomic ranges.

Example 1 of Kasuga et al. disclose an exemplary embodiment wherein a solution of molybdenum and vanadium components is admixed with phosphoric acid (considered to read upon "liquid A"), which is then admixed with cesium and nitrate components (considered to read upon "liquid C"), which is then admixed with an aqueous mixture (considered to read upon "liquid B").

The catalyst of Kasuga et al. is employable in the vapor phase oxidation or oxydehydrogenation reaction of methacrolein, isobutyl aldehyde and/or isobutyric acid. See col. 1, lines 57-61 of Kasuga et al., as well as col. 4, lines 24-41, the latter of which discloses exemplary process conditions (considered to read upon **claims 10-15**).

Kasuga et al. do not specifically disclose the specific amounts of the components, as recited in claim 1, nor does the reference specifically disclose the claimed requirements of each of the slurries, as recited in claims 3, 4, 8, and 9. However, because Kasuga et al. at col. 3, lines 7-22 disclose that the "raw materials containing the catalyst-constituting elements are subject to no particular limitation", and because Kasuga et al. require that the ammonium ion content should not exceed 10 mols per 12 mols of molybdenum ion content (col. 3, lines 44-46), which is within the ammonium ion contents for Applicants' "liquid A" and "liquid C", it would have been obvious to one skilled in the art at the time the invention was made to select catalyst components meeting the ammonium ion contents of Kasuga et al., and thereby obtain

Applicants' claimed process. It has been held to be within the general skill of a worker in the art to select a material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 U.S.P.Q 416.

3. Claims 1-15 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent No. 2000-296336, Applicants' submitted art (translation provided by the Examiner).

The Japanese Patent discloses a catalyst useful for the production of methacrylic acid by vapor phase catalytic oxidation of methacrolein, said catalyst produced by mixing a solution (A) containing at least molybdenum, phosphorus, and vanadium with a solution (B) containing an ammonia compound, and mixing that mixture (A + B) with a solution (C) which contains Z (represented by potassium, rubidium, cesium and thallium). The amount of ammonium radicals in solution (A) is less than or equal to 1.5 mols per 12 mols of molybdenum atoms, and the amount of ammonium radicals in (A + B) is 6-17 mols per 12 mols of molybdenum. See claim 1 of the Japanese Patent, which also discloses a molecular formula for the catalyst comparable to that recited in the instant claims.

The Japanese Patent does not specifically disclose the claimed amounts of the solutions to be admixed, as recited in the instant claims. Because the Japanese Patent teaches a catalyst formulaically similar to that recited in the instant claims, and teach a method comparable to that instantly claimed, in terms of the solutions and the components respectively contained therein, it would have been obvious to one skilled in

the art at the time the invention was made to determine through routine experimentation the optimal amounts of these components, and thereby obtain Applicants' claimed invention.

Response to Arguments

In response to Applicants' arguments that Kasuga et al. do not disclose or suggest the claimed invention, i.e., that the reference "contains no requirement that the raw materials be mixed in the form of three liquids, each having particular requirements, let alone that one particular liquid be mixed over a particular period of time", it is the Examiner's position that Example 1 of Kasuga et al. meets the limitations of the claims with respect to the claimed liquids A, B, and C. Applicants' statement that Kasuga et al. "is much further away from the presently-claimed invention than Naito et al." does not detract said reference from reading upon the instantly claimed invention. Further, the selection of both (1) copper and (2) potassium, rubidium, or cesium as the element X, and the adjustment of "d" to meet the terms of "d" and "g" as recited in the instant claims is not seen to require "the present disclosure as a guide". In view of the instant claims, the sum of "d" and "g" therein, numerically speaking, equals 0.02 to 5, which overlaps the range of 0.05 to 5, which is disclosed in Kasuga et al. at col. 2, line 60 as "d", the element X therein (which also encompasses Applicants' Cu and Z in the claimed formula).

In response to Applicants' argument that Naito et al. (the Japanese Patent) do not address the issue of a mixing time, the Examiner respectfully directs Applicants to paragraph [0022] of the Japanese Patent, which states:

"The method in particular of mixing the mixed liquor obtained by having mixed AB mixed liquor, copper, or said Y element and C liquid **is not limited**."

Emphasis added by the Examiner.

In view of this teaching, the mixing time is considered within the purview of ordinary skill in the art.

Further, although neither cited reference discusses a "mixing time", as recited in the instant claims, Applicants' lower endpoint of 0.1 minute—6 seconds—is considered encompassed by the prior arts' general teachings. The prior arts' disclosed techniques are considered to *at least* encompass 6 seconds of mixing, said mixing obtained by at least initially combining the components/compounds disclosed therein. Also, Applicants have not shown that the cited references of record do not exhibit methacrolein conversions, methacrylic acid yields, or methacrylic acid selectivities that are inferior to those respectively obtained by the claimed invention.

For these reasons, Applicants' arguments are not persuasive, and the rejections of record are maintained.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia L. Hailey whose telephone number is (571) 272-1369. The examiner can normally be reached on Mondays-Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 1700 Receptionist, whose telephone number is (571) 272-1700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Patricia L. Hailey/plh
Examiner, Art Unit 1755
September 5, 2006

J.A. LORENGO
SUPERVISORY PATENT EXAMINER